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Docket No.: KCC-15,481

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellants: Daniel J. SORENSEN, et al.

Serial No.: 09/849,594

Filing Date: 04 May 2001

Title: LEAK-PROOF INTERMITTENT  
ULTRASONIC BONDS

Confirmation No. 8899

Customer No. 35844

Group No.: 1771

Examiner: E. Cole

**APPELLANTS' REPLY BRIEF UNDER 37 CFR 41.41**

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Dear Sir:

Appellants herewith file their Reply Brief in the above-identified case, in response to the Examiner's Answer mailed 21 April 2005. Appellants respectfully submit that the Examiner's assertions are incorrect as a matter of law and fact. Thus, for the reasons set forth below, Appellants respectfully request that this Board reverse the rejection of Claims 1, 3-10, 12-16, 18-29, and 31-32 under 35 U.S.C. §103(a).

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Signature

In the Examiner's Answer, the Examiner presented responses to each of Appellants' arguments. Appellants reply to the Examiner's responses as follows:

**1. BRIDGES FAILS TO DISCLOSE OR SUGGEST A BOND OR SEAL THAT IS LEAK-PROOF.**

The tear line formed of a series of bond points in *Bridges* serves, primarily, to provide a line of weakness along which a garment may be torn for ease of removal. This tear line extends from a waist opening to a leg opening of a chassis, thereby creating a bond between the inner layer 46 and outer layer 48 of the chassis. It is Appellants' assertion that *Bridges* fails to disclose or suggest forming a leak-proof seal between the inner layer 46 and the outer layer 48.

The determination of whether a seam is leak-proof is based on the ability of liquid to pass through the seam *between* the bonded elements, not whether the liquid is able to pass through the surfaces of the individual layers or elements. Liquid *permeability* is determined by the ability of a liquid to pass perpendicularly through individual layers. Therefore, simply because the tear line in *Bridges* is formed of bond points instead of perforations does not render the tear line leak-proof.

The purpose of the tear line in *Bridges* is *not* to prevent the flow of liquids between the front and back of the garment, but instead is to enable easy removal of the garment. *Bridges* provides no suggestion or motivation for preventing the flow of liquids across the intact tear line between the inner and outer layers. In fact, once the tear line is torn, the bond points are *destroyed* and any evidence of a "seam" is certainly not leak-proof as achieved in the manner of Appellants' leak-proof seam, namely through the spacing and location of at least three parallel rows of bond points wherein at least one of the bond points in each of the rows is equally spaced apart from at least three other bond points.

Since the tear line in *Bridges* must be weak enough to permit tearing, it is unlikely that a person skilled in the art would modify the size, shape, and/or spacing of the bonds in *Bridges*, particularly by adding more bond points, to achieve a "leak-proof" seal having at least three parallel rows of bond points with at least one of the bond points in each row equally spaced apart from at least three other bond points. Additionally, adding more bond points to the outer rows in *Bridges* would likely render the tear line

unsatisfactory for its intended purpose, since the resulting tear line would likely be too strong to permit tearing.

Thus, *Bridges* fails to disclose or suggest a leak-proof bond or seal.

**2. BRIDGES FAILS TO DISCLOSE OR SUGGEST BONDING TOGETHER AT LEAST TWO LAYERS OF LIQUID-IMPERMEABLE MATERIAL.**

In conventional disposable training pants and other conventional disposable absorbent articles, the inner layer is liquid-permeable, which allows liquid to pass into the absorbent structures within the garment, and the outer layer is liquid-impermeable in order to contain liquid within the garment.

The tear line in *Bridges* bonds together the inner layer and the outer layer of a garment. Although *Bridges* lists a number of suitable materials for the inner layer and outer layer of the garment, there is no suggestion that both the inner layer and the outer layer are liquid-impermeable. *Bridges* states that the outer layer is preferably hydrophobic, but does not indicate whether the outer layer is liquid-impermeable. Even if the same materials were used to form the inner and outer layers, the materials would logically be treated differently (i.e., perforated or coated) to render the respective layers liquid-permeable or liquid-impermeable, for example.

Thus, *Bridges* fails to disclose or suggest bonding together at least two layers of liquid-impermeable material.

**3. EP '284 DOES NOT REMEDY THE DEFICIENCIES OF BRIDGES.**

*Bridges* does not disclose or suggest (i) at least three rows of bond points with at least one of the bond points in each of the rows equally spaced apart from at least three other bond points, (ii) the bonding of two layers of liquid-impermeable material, (iii) bonding along an edge of at least one of the layers, or (iv) a containment flap bonded to a garment in the manner recited in Appellants' claims.

*EP '284* discloses bond patterns for securing an elastic member within a containment flap. The bond pattern in Fig. 4 of *EP '284*, although it is illustrated as having at least three parallel rows of thermal bond points, is described as an example of *minimized use* of thermal bonds in the containment flap (Col. 10, lines 1-3). In fact, *EP*

'284 suggests that the pattern of thermal bonds located between the elastic member and the proximal edge may be spaced relatively far apart because it is not entirely critical to prevent the elastic member from passing outside the second pattern of thermal bonds (Col. 10, lines 20-30). This logic holds true for both Fig. 3 and Fig. 4. With spacing that is far enough apart to possibly allow an elastic member to pass between the bond points, the bond pattern in *EP* '284 would certainly not result in a leak-proof seal.

Simply stated, *Bridges* discloses a "tear line" extending from a waist opening to a leg opening in the front of a garment and *EP* '284 discloses containment flap constructions that include an elastic member bonded between two layers. Because of the different locations and the different qualities of the bond patterns in these two references, there is no suggestion or motivation for combining the teachings of *Bridges* with the teachings of *EP* '284. Furthermore, these references teach away from the proposed combination thereof.

More particularly, the purpose of the tear line in *Bridges* would be defeated if the bond pattern in *EP* '284 were combined with the garment in *Bridges*, because the bond pattern in *EP* '284 is designed to maintain an elastic member between two layers and is not designed to be weak or capable of tearing. Conversely, it would be counter-intuitive to combine the tear line of *Bridges* with the containment flaps of *EP* '284 because a tear line within a containment flap would result in leakage upon tearing.

Thus, *EP* '284 does not remedy the deficiencies of *Bridges*.

**4. BRIDGES FAILS TO DISCLOSE OR SUGGEST LOCATING BOND POINTS ALONG AN EDGE OF ANY LAYER.**

As recited in Appellants' independent Claims 1 and 27, at least two layers of liquid-impermeable material are bonded together along an edge of at least one of the layers. The meaning of the limitation "along an edge" is clear on its face within the context of the language of the claims. Any confusion over this limitation, should it arise, may be unambiguously interpreted in view of the specification as well as Fig. 1, which shows bond points along an edge of a layer of material.

*Bridges* fails to disclose or suggest locating the tear line along an edge of any layer, but instead teaches *away* from locating the tear line along an edge. More particularly, as disclosed in *Bridges*, if the tear lines are located near the side seams (i.e.,

near the edges of the inner and outer layers), the caretaker generally can not tear at both places without turning the child or changing hand positions (Col. 3, lines 58-61). In addition, *Bridges* suggests that the side seams may be constructed with maximum strength if the tear line is located *other than at the side seams* (Col. 3, lines 61-63). Thus, *Bridges* discloses point-bonded tear lines positioned away from the edges of the inner and outer layers, which is contrary to the limitations in Appellants' independent Claims 1 and 27.

**5. BOTH BRIDGES AND EP '284 FAIL TO DISCLOSE OR SUGGEST A BOND PATTERN FOR ATTACHING CONTAINMENT FLAPS TO A GARMENT.**

As recited in Appellants' independent Claim 14, the leak-proof seal bonds a containment flap to a garment. *Bridges* fails to disclose or suggest a plurality of ultrasonic bond points joining a containment flap to a garment and forming a leak-proof seal between the containment flap and the garment. Instead, the tear lines in *Bridges* are located on a front portion of the garment extending from the waist opening to the leg openings, thereby enabling a caretaker to tear the lines apart in order to remove the garment from the wearer. There is no suggestion in *Bridges* to attach containment flaps to a garment using a plurality of ultrasonic bond points.

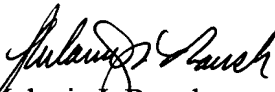
*EP '284* does not disclose or suggest a bond pattern for attaching containment flaps to a garment, but instead discloses bond patterns for securing an elastic member within a containment flap. Since the bond points in *EP '284* are used to secure an elastic member *within* the confines of a containment flap, and not for securing one element to a separate element, there is no motivation to space the bond points close enough to render the seam "leak-proof."

Thus, both *Bridges* and *EP '284* fail to disclose or suggest a bond pattern for attaching containment flaps to a garment.

**CONCLUSION**

For the reasons presented above, Appellants respectfully submit that the Examiner's Answer does not overcome Appellants' Appeal Brief. Therefore, Appellants respectfully request that the Board reverse the rejections proposed by the Patent Office.

Respectfully submitted,



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